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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,858	06/27/2003	Alan Michael Jaffee	7304	7146

7590

07/25/2006

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EXAMINER

BOYD, JENNIFER A

ART UNIT

PAPER NUMBER

1771

DATE MAILED: 07/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/607,858

Applicant(s)

JAFFEE, ALAN MICHAEL

Examiner

Jennifer A. Boyd

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1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/9/06.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 6, 8 - 15 and 17 - 32 is/are pending in the application.
- 4a) Of the above claim(s) 28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 6, 8 - 15, 17 - 27, 29 - 32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6/13/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 3, 2006 has been entered. The Applicant's Amendments, Accompanying Remarks and Declaration under 37 CFR 1.132, filed May 3, 2006, have been entered and have been carefully considered. Claims 1, 22, 27, 29 and 32 are amended, claims 7 and 16 are cancelled and claims 1 – 6, 8 – 15 and 17 – 32 are pending. In view of Applicant's amendments to the claims, the Examiner withdraws the rejection over Kennedy as detailed in the Office Action dated December 27, 2004. The contents of the 37 CFR 1.132 Declaration are discussed below. The invention as currently claimed is not found to be patentable for reasons herein below.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

3. Claims 1 – 6, 8 – 15, 17 – 19, 21 – 24, 26 – 27 and 29 – 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jaffee (US 5,772,846).

Jaffee is directed to a nonwoven glass fiber mat for facing gypsum board (Title).

As to claims 1, 19 – 22, 27 and 32, Jaffee teaches a nonwoven fibrous mat for use as a

facer on a gypsum insulating board (column 2, lines 1 – 15). Jaffee teaches that the mat comprises a major portion of textile glass fibers and a minor portion of polymer fibers (column 2, lines 50 – 60). Jaffee teaches that the nonwoven mat is bound together with a latex (column 2, lines 35 – 45). The Examiner equates the latex to Applicant's "resinous binder". Jaffee teaches that the glass fibers can have a length between 0.25 and 1 inch (column 3, lines 55 – 60); the Examiner equates this short length to Applicant's "chopped continuous fibers". Jaffee teaches that the glass fibers have an average diameter from about 9 microns to 20 microns (column 3, lines 35 – 40). Jaffee states that it is known to face a gypsum wall board with a fiber glass nonwoven mat as shown in US. Patent No. 4,647,496, the disclosure of which is hereby incorporated by reference. It should be noted that phrase "incorporated by reference" means that the information incorporated is as much a part of patent as if the text was repeated in the patent, and should be treated as part of the text of the patent. Therefore, although not explicitly shown in Jaffee, the incorporated US Patent No. 4,647,496 shows in Figure 8 that the nonwoven fibrous mat facing materials are applied to both sides of the gypsum board. It should be noted that both of the facing materials have the same composition. US Patent No. 4,647,496 further teaches that the gypsum material is "set" (Abstract). The Examiner equates the facing material applied to the first and second sides of the gypsum board as "first facer" and "second facer". In regards to the transitional phrase of "consisting essentially of", the phrase limits the scope of a claim to the specified materials or steps "and those that do not materially affect the basic and novel characteristic(s)" of the claimed invention. *In re Herz*, 537 F.2d 549, 551-52, 190 USPQ 461, 463 (CCPA 1976). The burden is upon the Applicant to show that the additional components do affect the basic and novel characteristics of the invention. For the purposes of searching for and

applying prior art under 35 U.S.C. 102 and 103, absent a clear indication in the specification or claims of what the basic and novel characteristics actually are, “consisting essentially of” will be construed as equivalent to “comprising.” See MPEP 2111.03. The Applicant may wish to amend the claim to use the transitional phrase “consisting of” which excludes any element, step, or ingredient not specified in the claim. For the purposes of examination at this time, the Examiner will interpret “consisting essentially of” as “comprising”.

As to claims 2 and 3, Jaffee teaches that the glass fibers can comprise any type of glass fibers, but E type, C type, T type and sodium borosilicate are preferred (column 3, lines 34 – 40).

As to claims 4 – 6, Jaffee teaches that the glass fibers have an average diameter from about 9 microns to 20 microns (column 3, lines 35 – 40). Jaffee teaches that the mat has a major portion of glass fibers and a minor portion of polyester fibers (Abstract). Jaffee further teaches that a minor portion of the glass fibers can have a diameter of 0.4 – 2 microns (column 3, lines 40 – 47).

As to claims 7, Jaffee teaches that the glass fiber lengths can range from 0.25 inches to 1 inch (column 3, lines 55 – 60), or equal to 6.35 – 25.4 mm. It should be noted that the Applicant’s range overlaps the range stated by Jaffee.

As to claim 8, Jaffee teaches that the glass fibers can all have the same length (column 3, lines 54 – 56).

As to claim 9, Jaffee teaches that the latex, or “resinous binder”, comprises a crosslinkable vinyl chloride acrylate copolymer latex (column 3, lines 60 – 67). Jaffee states that an aqueous stearylated melamine emulsion can be added to the latex to act as an external

crosslinker (column 4, lines 14 – 30). Therefore, it is the position of the Examiner that the final product latex would be crosslinked as required by the Applicant.

As to claim 10, Jaffee teaches that the latex, or “resinous binder”, comprises a crosslinkable vinyl chloride acrylate copolymer latex (column 3, lines 60 – 67) which is subsequently crosslinked (column 4, lines 14 – 30). It is the position of the Examiner that the crosslinked latex is equivalent to Applicant’s “modified acrylic latex binder” because an acrylate is an acrylic.

As to claims 11 - 12, Jaffee teaches that the stearylated melamine emulsion, which acts as a crosslinker, is present in the amount of up to 10 weight percent (column 4, lines 30 – 38).

As to claim 13, Jaffee teaches that stearylated melamine emulsion is mixed with copolymer latex and water to create a binder for the mats (column 4, lines 15 – 20).

As to claim 14, Jaffee teaches that the crosslinkable vinyl chloride acrylate copolymer latex has a glass transition temperature of up to 113 degrees F (column 3, lines 60 – 68). It should be noted that the Applicant requires a glass transition temperature range of about 15 to 45 degrees Celsius (15 – 133 degrees F).

As to claim 15, Jaffee teaches that the stearylated melamine emulsion provides water repellency to the mat (column 4, lines 20 – 25).

As to claims 17 and 18, Jaffee teaches that the facer material or “fibrous mat” can weigh about 1.8 to 2.2 pounds per 100 square feet (column 3, lines 18 – 25).

As to claim 19, Jaffee teaches that the facer material or “fibrous mat” can preferably weigh about 1.8 to 2.2 pounds per 100 square feet (column 3, lines 18 – 25). Jaffee indicates that the mat can be any weight (column 3, lines 14 – 18).

As to claims 23 and 24, it should be noted that Jaffee states that it is known to face a gypsum wall board with a fiber glass nonwoven mat as shown in US. Patent No. 4,647,496, the disclosure of which is hereby incorporated by reference. It should be noted that phrase “incorporated by reference” means that the information incorporated is as much a part of patent as if the text was repeated in the patent, and should be treated as part of the text of the patent. Therefore, although not explicitly taught in Jaffee, the incorporated US Patent No. 4,647,496 teaches that the gypsum core has water-resistant properties imparted by the incorporation of one or more additives (column 9, lines 49 – 60). US Patent 4,647,496 also teaches that the gypsum board can further comprise a paper fiber which acts as a viscosity-control agent (column 13, lines 15 – 20).

As to claim 29, Jaffee teaches a nonwoven fibrous mat for use as a facer on a gypsum insulating board (column 2, lines 1 – 15). Jaffee teaches that the mat comprises a major portion of textile glass fibers and a minor portion of polymer fibers (column 2, lines 50 – 60). Jaffee teaches that the nonwoven mat is bound together with a latex (column 2, lines 35 – 45). The Examiner equates the latex to Applicant’s “resinous binder”. Jaffee teaches that the glass fibers can have a length between 0.25 and 1 inch (column 3, lines 55 – 60); the Examiner equates this short length to Applicant’s “chopped continuous fibers”. Jaffee teaches that the glass fibers have an average diameter from about 9 microns to 20 microns (column 3, lines 35 – 40).

As to claims 1, 4 – 6, 8, 19, 22, 27, 29, 30 and 32, Jaffee fails to disclose that the average fiber diameter ranges specifically from 9.5 – 12.5 microns and the average fiber length ranges specifically from 6 – 12 mm as required by claims 1, 22, 27, 29 and 32, the glass fibers having a diameter of between 9.5 – 12.5 microns comprise at least 90% by weight of the glass fibers as

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required by claims 4 and 30, at least 95% as required by claim 5, at least 97% by weight as required by claim 6, the chopped glass fibers have a fiber length ranging from about 6 – 18 mm as required by claim 8, and the fibrous mat has a basis weight of about 1.25 ± 0.2 pounds per 100 square feet as required by claim 19. However, in the absence of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to optimize the fiber diameter, length, proportion of glass fibers and basis weight since it has been held that where general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 220 F.2d 454 USPQ 233 (CCPA 1955). In the present invention, one would have been motivated to optimize the fiber diameter, length, proportion of glass fibers and basis weight in order to create a composite with the desired properties such as flexibility and strength while minimizing skin irritation during installation.

As to claims 26 and 31, although Jaffee does not explicitly teach the claimed flame resistance to pass the test of ASTM Method E84, Class 1 as required by claim 26 and a permeability of 300 cfm/ft² as required by claim 31, it is reasonable to presume that said properties are inherent. Support for said presumption is found in the use of like materials (i.e. a gypsum board sandwiched by two facing layers comprising chopped glass fibers having a diameter from 9.5 – 12.5 microns which would result in the claimed properties. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed property would obviously have been present once the Jaffee product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977) as to providing of this rejection made above under 35 USC 102.

4. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jaffee (US 5,772,846) in view of Horner, Jr. et al. (US 6,365,533).

Jaffee teaches the claimed invention above but fails to disclose that the second facer can comprise kraft paper.

Horner, Jr. et al. is directed to a foamed facer suitable for use in the construction industry comprising a dry preformed glass fiber mat containing a binder (Abstract). Horner teaches that the first and second facers can be of the same or of a different composition than that of this invention. More specifically, one of the facer sheets maybe be selected from those conventionally employed such as kraft paper and the other facer sheet is one of the current invention which enhances the composite (column 6, lines 1 – 15).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a kraft paper as one of the facer materials as suggested by Horner, Jr. et al. in the gypsum board composite of Jaffee motivated by the desire to save manufacturing costs by employing a conventional facer on one side and the improved and enhanced facer on the other side.

5. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jaffee (US 5,772,846) in view of Carbo et al. (US 7,056,582).

Jaffee teaches the claimed invention but fails to teach that the core may further comprise a biocide.

Carbo is directed to a mold resistant acoustical panel (Title). Carbo teaches, during manufacture of the panels, the zinc pyrithione is added to the slurry of water, fillers and binders that is used to form the panel. It is particularly surprising that the pyrithione salt added to the

core protects both the panel core and the coating material. The panels of the present invention having zinc pyrithione incorporated only in the core exhibit improved mold resistance to an extent that would not be expected by incorporation of the zinc pyrithione into the core only. Regardless of the actual mechanism, biocides that display this behavior are useful in the acoustical panels of this invention (column 5, lines 25 – 50).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a biocide into the core of Jaffee as suggested by Carbo motivated by the desire to create a mold resistant panel.

Response to Arguments

6. Applicant's arguments filed May 3, 2006 have been fully considered but they are not persuasive.

Applicant argues that Jaffee does not anticipate Applicant's claimed limitations, especially in regards to the average fiber diameter and average fiber length. Please see the revised rejection above where the Examiner submits that the invention as claimed is rendered obvious over Jaffee.

Applicant argues that the claimed average fiber diameter and average fiber length ranges have surprising and unexpected results delineated by the instant Specification. The Examiner does agree that the Specification asserts unexpected results but has failed to fully substantiate the assertion with evidence. In the Specification, the Applicant did not fully disclose the details of the experiments. In particular, the Applicant did not disclose the length of the fibers, the percentage of fibers and the amount of binder used in Examples 2 – 4 so a fair comparison cannot be made between the inventive examples and the conventional example.

Applicant has provided a 37 CFR 1.132 Declaration in order to submit data that establishes superior smoothness of the board delineated by claim 1 and that the smoothness of the claimed board is surprising and unexpected. It should be noted that the Applicant has provided Samples 1 – 4: Sample 1 is outside Applicant's claimed fiber diameter range and fiber length range, Sample 2 is inside Applicant's claimed fiber diameter range and inside the fiber length range, Sample 3 is outside Applicant's claimed fiber diameter range and inside the fiber length range and Sample 4 is inside Applicant's claimed fiber diameter range and outside the fiber length range. The Examiner does recognize that the lower value of standard error is indicative of smoother boards, which is within Applicant's claimed fiber diameter range and fiber length range. However, it should be noted that "to establish unexpected results over a claimed range, applicants should compare *a sufficient number* of tests both inside and outside the claimed range to show the criticality of the claimed range. *In re Hill*, 284 F.2d 955, 128 USPQ 197 (CCPA 1960). Furthermore, whether the unexpected results are the result of unexpectedly improved results or a property not taught by the prior art, the "objective evidence of nonobviousness must be commensurate in scope with the claims which the evidence is offered to support." In other words, the showing of unexpected results must be reviewed to see if the results occur over the entire claimed range. *In re Clemens*, 622 F.2d 1029, 1036, 206 USPQ 289, 296 (CCPA 1980). The Examiner submits that the Applicant has not provided enough Samples to demonstrate that the unexpected results occur over the entire claimed range and would not occur in the broader range disclosed by Jaffee. The Applicant has only provided one sample which meets Applicant's diameter and length ranges and one sample which is outside Applicant's diameter and length ranges. Furthermore, the Applicant has not determined a trend in the

exemplified data which would allow the artisan to reasonably extend the probative value thereof.


The Declaration is not persuasive.


Applicant argues that the flame resistance and the permeability cannot be asserted to be inherent to Jaffee. Since Jaffee meets each and every chemical and structural requirement for the gypsum board composite set forth in the claims, the composite must meet the flame resistance and permeability that depends from said requirements. Since no other structural or chemical features are claimed in the independent claims, which may distinguish the present invention from Jaffee, the presently claimed flame resistance and permeability is deemed to be inherent to Jaffee. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald*, 205 USPQ 495. However, such evidence could support the proposition that the current claims are incomplete. Given that the applied art desires and is designed to function as Applicant's intend their invention to function in all comparable aspects, including same utility, one can only conclude that Jaffee inherently possesses the required flame resistance and permeability (along with other properties), absent some evidence or showing that such a conclusion does not follow from the facts of record.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Boyd whose telephone number is 571-272-1473. The examiner can normally be reached on Monday thru Friday (8:30am - 6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Jennifer Boyd
July 21, 2006


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